

IN THE CLAIMS:

Please amend claims 1-19 and add new claims 20-22 as set forth below.

1. (Currently Amended) ~~A network device for managing addresses to be assigned to users of an IP network, the network device~~An apparatus, comprising:

~~at least one queue for holding~~ configured to hold released addresses;

~~the network device configured to:~~

a detector configured to detect that a packet has been addressed to a released address held in the at least one queue; and

a returner configured to return the held address to which the packet has been addressed to an end of the at least one queue.

2. (Currently Amended) ~~The network device~~ apparatus according to claim 1, ~~further configured to~~ comprising:

said detector being further configured to detect that an address of a user has been released; and

an adder configured to add the released address to the end of the at least one queue.

3. (Currently Amended) ~~The network device~~ apparatus according to claim 2, ~~further configured to~~ comprising:

a classifier configured to classify the released address into a group out of at least two address groups, each address group of the at least two address groups having its own queue holding released addresses; and

an adder configured to add the released address to an end of the queue of the classified group, the queues being given a priority order for re-assigning the released addresses held in the queues.

4. (Currently Amended) The ~~network device~~ apparatus according to claim 1, ~~further configured to~~ further comprising:

a transmitter configured to send an error notification to a source of a packet upon detection that a packet has been addressed to the released address held in the at least one queue, ~~send an error notification to a source of the packet.~~

5. (Currently Amended) The ~~network device~~ apparatus according to claim 1, wherein the ~~network device is configured~~ detector is configured to detect that a packet has been addressed to the released address held in the at least one queue by receiving the packet addressed to the released address.

6. (Currently Amended) The ~~network device~~ apparatus according to claim 2, wherein the ~~network device is configured to~~ detector is configured to detect that an address of a user has been released by detecting a loss of a connection which releases its address.

7. (Currently Amended) ~~The network device~~ apparatus according to claim 1, wherein ~~the network device is configured to~~ detector is configured to detect that a packet has been addressed to the released address held in the at least one queue by receiving an error notification indicating an unused address.

8. (Currently Amended) ~~The network device~~ apparatus according to claim 2, wherein ~~the network device is configured~~ detector is configured to detect that an address of a user has been released by receiving a notification thereon.

9. (Currently Amended) ~~A network device for forwarding IP data packets, the network device~~ An apparatus, comprising:

~~configured to:~~

a receiver configured to receive a packet addressed to an unused address; and

a transmitter configured to send an error notification to a network node ~~for managing configured to manage~~ addresses, the error notification indicating the unused address.

10. (Currently Amended) ~~The network device~~ apparatus according to claim 9, wherein the error notification causes a return of a released address held in a queue and corresponding to the unused address to an end of the queue, the queue holding released addresses.

11. (Currently Amended) ~~The network device~~ apparatus according to claim 9, further ~~configured to~~ comprising:

a detector configured to detect a loss of a connection which releases its address;
and

wherein said transmitter is configured to send a notification about the released address to the network node ~~for managing~~ configured to manage addresses.

12. (Currently Amended) ~~The network device~~ apparatus according to claim 9, further ~~configured to~~ wherein

said transmitter is configured to send an error notification to a source of the packet upon receipt of the packet addressed to the unused address, ~~send an error notification to a source of the packet.~~

13. (Currently Amended) A ~~system for managing addresses to be assigned to users of an IP network,~~ comprising:

a first network node ~~for managing~~ configured to manage addresses, the first network node comprising;

at least one queue ~~for holding~~ configured to hold released addresses;

~~the first network node configured to:~~

a detector configured to detect that a packet has been addressed to a released address held in the at least one queue; and

a returner configured to return the held address to which the packet has
been addressed to an end of the at least one queue; and

a second network node ~~for forwarding~~ configured to forward IP data packets, the
second network node ~~configured to:~~ comprising,

a receiver configured to receive a packet addressed to an unused address; and

a transmitter configured to send an error notification to the first network node, the
error notification indicating the unused address.

14. (Currently Amended) A method ~~of managing addresses to be assigned to~~
~~users of an IP network, the method comprising the steps of:~~

detecting that a packet has been addressed to a released address held in a queue
holding released addresses; and

returning the held address, to which the packet has been addressed, to an end of
the queue.

15. (Currently Amended) A method ~~of forwarding IP data packets, the method~~
~~comprising the steps of:~~

receiving a packet addressed to an unused address; and

sending an error notification to a network node ~~for managing~~ configured to
manage addresses, the error notification indicating the unused address.

16. (Currently Amended) The method according to claim 15, wherein ~~the step of~~ sending the error notification further comprises causing a return of a released address held in a queue and corresponding to the unused address to an end of the queue, the queue holding released addresses.

17. (Currently Amended) ~~A computer~~ computer-readable program ~~embodied on a computer-readable distribution medium comprising software code portions for performing steps of encoding a computer program of instructions being configured to control a processor to perform:~~

detecting that a packet has been addressed to a released address held in a queue holding released addresses; and

returning the held address, to which the packet has been addressed, to an end of the queue.

18. (Currently Amended) The computer program according to claim 17, further comprising:

a computer-readable medium on which ~~the software code portions~~ computer program of instructions are stored.

19. (Currently Amended) The computer program according to claim 17, wherein ~~the computer program product~~ computer-readable distribution medium is configured to be directly loadable into an internal memory of the computer.

20. (New) An apparatus, comprising:

holding means for holding released addresses;

detecting means for detecting that a packet has been addressed to a released address held in the at least one holding means; and

returning means for returning the held address to which the packet has been addressed to an end of the at least one holding means.

21. (New) An apparatus, comprising:

receiving means for receiving a packet addressed to an unused address; and

sending means for sending an error notification to a network node configured to manage addresses, the error notification indicating the unused address.

22. (New) A system, comprising:

managing means for managing addresses;

holding means for holding released addresses;

detecting means for detecting that a packet has been addressed to a released address held in the holding means;

returning means for returning the held address to which the packet has been addressed to an end of the at least one holding means;

receiving means for receiving a packet addressed to an unused address; and

sending means for sending an error notification to the managing means, the error notification indicating the unused address.